

WHAT IS CLAIMED IS:

1. 1. An air conditioner housing for automobiles, comprising:
  - a housing body having front and rear spaces for accommodating an evaporator and a heater core;
  - upper and lower air passages defined by partitioning an inner air passage of the housing body between the evaporator and heater core accommodating spaces with a first partitioning wall;
  - a front foot vent formed at an air outlet end of said lower air passage, and defrosting and face vents formed at an air outlet end of said upper air passage and selectively opened and closed by doors;
  - a front air passage formed by a guide wall slantingly upwardly extended to partition a space behind the heater core accommodating space and positioned between the guide wall and an upper half of the heater core and communicated with the upper air passage, and a rear air passage formed behind the guide wall to communicate with the upper and lower air passages;
  - a combined door of foot and combination door positioned on a boundary of said rear air passage and said lower air passage for adjusting degrees of opening of said front foot vent and said rear air passage; and
  - first, second and third temperature adjusting doors rotatably disposed in front of and behind a lower half of said heater core accommodating space and in front of an upper half of said heater core accommodating space, respectively.
2. The air conditioner housing according to claim 1, further comprising:
  - a rear vent housing including a rear foot vent, said rear vent housing being attached to a portion of a rear wall of said housing body ranging from a part of said rear air passage to said lower air passage;
  - a first communication vent formed on the portion of the rear wall of said housing body for allowing said rear air passage and said rear foot vent to communicate with each other; and

a first communication door operated in conjunction with said combined door of foot and combination door for adjusting a degree of opening of said first communication foot vent.

3. The air conditioner housing according to claim 2, wherein said combined door of foot and combination door is connected to said first communication door by a hinged joint.

4. The air conditioner housing according to claim 2, wherein said first communication door is separated from said combined door of foot and combination door.

5. The air conditioner housing according to any of claims 2, further comprising a second communication foot vent formed on the rear wall of said housing body, a degree of opening of said second communication foot vent being adjusted by said second communication door.

6. The air conditioner housing according to claim 1, wherein said heater core accommodating space is spaced apart from a bottom of said housing body by a predetermined interval so in cooling mode, cold air always flows through a portion of said lower air passage under the heater core.

7. The air conditioner housing according to claim 1, further comprising a baffle, said baffle being positioned at a rear end portion of said lower air passage selectively to guide air flowing through the lower air passage toward the front foot vent or the rear air passage, and to close the lower air passage by being brought into contact with an front end of the combined door of foot and combination door or the second temperature adjusting door when the combined door of foot and combination door fully opens the front foot vent or the second temperature adjusting door fully opens air passages extended to the heater core.

8. The air conditioner housing according to claim 1, further comprising a condensed water outlet formed in a portion of the housing body under the evaporator accommodating space to discharge condensed water formed on the evaporator, and a baffle formed on a bottom of the housing body under the lower air passage to guide to the condensed water outlet condensed water flowing under the heater core.

9. An air conditioner for automobiles, comprising:  
an evaporator and a heater core;

an air conditioner housing, comprising,

a housing body having front and rear spaces for accommodating an evaporator and a heater core,

upper and lower air passages defined by partitioning an inner air passage of the housing body between the evaporator and heater core accommodating spaces with a first partitioning wall,

a front foot vent formed at an air outlet end of said lower air passage, and defrosting and face vents formed at an air outlet end of said upper air passage and selectively opened and closed by doors,

a front air passage formed by a guide wall slantingly upwardly extended to partition a space behind the heater core accommodating space and positioned between the guide wall and an upper half of the heater core and communicated with the upper air passage, and a rear air passage formed behind the guide wall to communicate with the upper and lower air passages,

a combined door of foot and combination door positioned on a boundary of said rear air passage and said lower air passage for controlling degrees of opening of said front foot vent and said rear air passage, and

first, second and third temperature adjusting doors rotatably disposed in front of and behind a lower half of said heater core accommodating space and in front of an upper half of said heater core accommodating space, respectively; and

a blower placed at an entrance of the housing body to blow recirculation air/fresh air to an upper air passage and a lower air passage in independent or combinational manner.

10. The air conditioner for automobiles according to claim 9, wherein said blower comprises:

a scroll housing positioned at an entrance of said air conditioner housing and divided into upper and lower scroll housing parts by a second partitioning wall, said upper and lower scroll housing parts communicating with the upper and lower air passages, respectively;

first and second blower fans placed in the upper and lower scroll housing parts, respectively;

a motor for rotating the blower fans;

an air intake duct for sucking fresh air and/or recirculation air to the scroll housing by adjusting a degree of the fresh or recirculation air intake opening by a changeover door; and

an air guide duct connecting the air intake duct and the entrance of the air conditioner housing to guide air sucked into the air intake duct to the lower scroll housing part.

11. The air conditioner for automobiles according to claim 9, wherein said heater core is placed at a position spaced apart from a bottom of said housing body by a predetermined interval so in cooling mode, cold air always flows through a portion of said lower air passage under the heater core.

12. The air conditioner for automobiles according to claim 9, further comprising a baffle, said baffle being placed at a rear end portion of said lower air passage to selectively guide air flowing through the lower air passage toward the front foot vent or the rear air passage, and close the lower air passage by being brought into contact with an front end of the combined door of foot and combination door or the second temperature adjusting door when the combined door of foot and combination door fully opens the front foot vent or the second temperature adjusting door fully opens air passages extended to the heater core.

13. The air conditioner for automobiles according to claim 9, further comprising a condensed water outlet formed in a portion of the housing body under the evaporator to discharge condensed water formed on the evaporator, and a baffle formed on a bottom of the housing body under the lower air passage to guide to the condensed water outlet condensed water flowing under the heater core.

14. An air conditioner for use in an automobile, comprising:

a housing having a plurality of partitions;

a first heat exchanger enclosed in the housing and configured to pass an airflow therethrough;

a second heat exchanger enclosed in the housing and configured to receive the airflow from the first heat exchanger;

wherein the partitions of the housing define a first air passage and a second air passage between the first and second heat exchangers so that the airflow passing through the first heat exchanger can be selectively divided into first and second airflows through the first and second air passages, respectively; and

wherein the partitions of the housing further define a third air passage in airflow communication with the first and second air passages and being configured to allow at least one of the first and second airflows to detour the second heat exchanger.

15. The air conditioner of Claim 14, further comprising a first door located between the second and third air passages, wherein the first door is configured to adjust the amount of at least part of the second airflow from the second air passage to the third air passage.

16. The air conditioner of Claim 14, wherein the housing defines a first vent configured to discharge at least part of the second airflow therefrom.

17. The air conditioner of Claim 16, further comprising a second door configured to adjust the amount of at least part of the second airflow to be discharged through the first vent.

18. The air conditioner of Claim 17, further comprising a structure attached to the housing and having a second vent, wherein the structure is configured to receive an airflow flowing through the third air passage and to discharge the received airflow through the second vent.

19. The air conditioner of Claim 18, wherein the structure comprises a third door configured to adjust the amount of the airflow to be discharged through the second vent.

20. The air conditioner of Claim 19, wherein the second and third doors are connected to each other by a hinged joint such that the second and third doors can be operated at the same time by rotation of the hinged joint.

21. The air conditioner of Claim 14, further comprising a structure attached to the housing and including an airflow communication vent and a second vent, wherein the airflow

communication vent is configured to receive an airflow flowing through the third air passage and the second vent is configured to discharge the received airflow therefrom.

22. The air conditioner of Claim 14, wherein the plurality of partitions include a second partition located between the first heat exchanger and the second heat exchanger, and being configured to divide the airflow into the first and second airflows.

23. The air conditioner of Claim 22, wherein the second heat exchanger comprises first and second portions configured to allow the first and second airflows to pass therethrough, respectively.

24. The air conditioner of Claim 23, wherein the plurality of partitions include a third partition located between the second heat exchanger and the third air passage, and being configured to guide the first airflow that has passed through the second portion of the second heat exchanger toward the third air passage.

25. The air conditioner of Claim 23, further comprising a fourth door located between the second heat exchanger and the third air passage, and being configured to adjust the amount of the second airflow that has passed through the second portion of the second heat exchanger and is flowing to the third air passage.

26. A method of operating an air conditioner, comprising:

passing an airflow through a first heat exchanger;

flowing the airflow from the first heat exchanger through first and second air passages located between the first heat exchanger and a second heat exchanger, thereby forming first and second airflows, respectively;

flowing at least part of the first and second airflows through a third air passage configured to allow the at least part of the first and second airflows therethrough so as to detour the second heat exchanger.

27. The method of Claim 26, further comprising discharging at least part of the second airflow to outside the air conditioner.

28. The method of Claim 27, further comprising adjusting the amount of the airflow to be discharged.

29. The method of Claim 26, further comprising passing the first and second airflows through first and second portions of the second heat exchanger, respectively.

30. The method of Claim 29, further comprising adjusting the amount of the second airflow that has passed through the second portion of the second heat exchanger and is flowing to the third air passage.

31. The method of Claim 26, further comprising adjusting the amount of at least part of the second airflow from the second air passage to the third air passage.